Panukala Blg.
NSDB-GAUF 7706 Spi

PALAGAWAANG ARANETA-PLPA SA KATAWAGAN PARA SA SALIPAT NG AGHIMUAN SA KABUKIRAN

(ARANETA-NSDB Terminology Program for Technology Transfer to Rural Areas)

Blg. 2

SINALAPAT NA AGHAM

(Applied Science)

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BUNGADSABI

Ang **Palagawaang Araneta-PLPA sa Katawagan para sa Salipat ng Aghimuan sa Kabukiran** ay isang palagawaan ng sabalak-wika na tinutustusan ng PLPA (Pambansang Lupon sa Paunlarang Agham) sa ilalim ng Panukala Blg. NSDB-GAUF 7706 Spi. Bilang panimulang hakbang ito ay nagtipon ng siyam (9) na batayan at magkakaugnay na may 1000-pasok na talasalitaan ng mga tawag at pahayag sa Aghimuing Pilipino, na ihinanda ayon sa pamamaraang maugnayin, sa mga sumusunod na sinatanging aghimuaning larangan:

1. Sinalapat na Sipnayan
2. Sinalapat na Agham
3. Sabalak-Angkan
4. Sakahan
5. Sakahaning Agsikapan
6. Palahayupan
7. Palagamutang-Hayop
8. Palagubatan
9. Pamahayagan at Salathala

Lahat ng mga nangaunang talasalitaan sa Pilipino, pati na yaong sa maugnaying Pilipino na ihinanda ng **Lupon sa Agham,** ay naglalaman ng halos lahatang tawag at pahayag lamang sa agham; walang isa man na nagbibigay ng tiyak at maayos na mga salitang-pasok tulad ng makikita sa siyam na talasalitaang ihinanda ngayon ng *Palagawaang ito. Ang siyam na talasalitaan* ay panungkulaning sinatungo at maaaring gamitin sa paghahanda ng sapat na mga aklat-aralan para sa lahat ng aghimuing kaaralan sa dalubhasaan na ibinibigay sa **Takaran ng Pamantasang Gregorio Araneta** gayundin para sa mga katulad na kaaralan sa ibang mga dalubhasaan at pamantasan.

Ang Sabalak-Angkan ay hindi pangunahing pantalaaralang larangan ngunit isinama ito bilang hiwalay na panukala dahil sa napapanahon at dahil sa ang pagkamabisa ng maugnaying Pilipino ay unang naipakilala sa larangang ito.

Sa lahatang ayos ng Palagawaan, ang bawat isa sa siyam na guro ng Kagawaran ng Aghimuing Pilipino ng Pamantasan na may kasanayan at may karanasan ay nakipagtulungan sa isang may kakayahan at karanasang guro ng bawat aghimuanin o pang-agham na dalubhasaan ng TPGA. Ang bawat ganyang koponan ay nagtipon, nagsuri ng kahulugan, nagsapamantayan at sumubok sa mga tawag at pahayag ng kaukulang larangan ng koponan.

Ang gawain ay sinimulan noong Pebrero 16, 1978 at natapos noong Hulyo 15, 1978.

Ang mga manunungkulan at manunupad ay dumaraing sa kakulangan ng mga aklat at ibang lathalaing nakasulat sa aghimuing Pilipino. Ito ay dahil sa kakulangan ng maayos at makatwirang talasalitaan sa iba't ibang aghimuaning larangan. Sa ngayon, wala pang pampaturuang tatagin, maliban sa Takaran ng Pamantasang Gregorio Araneta, na nakapaglakip ng kadalubhasaan sa wika at sa aghimuan at humarap upang tustusan ang mahalgang pangangailangang ito. Ang iba ay naniniwala na ang mga aghimuing sansalitaan ay likas na sisipot sa kaukulang panahon. Maaaring gayon nga sa katagalan, ngunit ang haba ng kakailanganing panahon ay magiging dikatanggap-tanggap; ito ay maaaring masukat sa mga dantaon sa halip na sa mga pampaaralang hatintaon.

Gumagamit ang Pamamaraang Maugnayin sa mga hangong salita batay sa mga salitang-ugat, panlapi, panambal at palabuuan na dati nang alam, o madaling maipaliliwanag, sa lakastao sa kabukiran ng bansang ito na may matibay na sanligan ng wikang Sampuluanin o Malayo-Polinesiko. Ang maugnaying pamamaraan ay salungat sa walang-taros na paggamit ng mga salitang hiram, lalo na yaong naghahalo ng maraming panambal na Griyego at Latin na hindi madaling maipaliwanag sa di-katutubong nagsasalita ng mga wikang Yurophin. Gayunman, ang mga aghaming ngalan ng mga halaman at hayop (hbw. **Terminalia catappa** para sa punong talisay) ay mananatili upang hindi magambala ang kasiyangaan.

Inaasahan na mula ngayon ang mga tapos sa Sakahan at mga kaugnay na kaaralan, na gumamit ng mga

aklat-aralan na nakasulat sa aghimuing Pilipino, na ihinanda ayon sa Pamamaraang Maugnayin, tulad ng ipinaliwanag sa itaas, ay makakatuklas na maaaring ilipat ang aghimuan sa lakastao sa mga kabukiran.

May apat na katangian ang siyam na talasalitaan ng Palagawaang ito na magpapagaan sa kanilang salagom sa kabuuan ng mga katawagang maugnayin.

Una, sila ay maugnayin sa mga salitang nakapasok na sa "Maugnaying Talasalitaang Pang-agham, Ingles-Pilipino" na ilinathala ng **Lupon sa Agham** na itinaguyod ng UNESCO noong 1969. Nagtataglay ng mga 7,500 salita, tawag at pahayag ang lahatang talasalitaang pang-agham na ito.

Pangalawa, ang unang 350 mga salitang-pasok sa bawat isa ng siyam na muntaklat ay magkakaisa, upang mabigyan ang lahat ng siyam na panungkulaning larangan ng magkatulad na butod ng mga batayang tawag na pang-agham.

Pangatlo, sa 350 salitang-pasok, 200 and mga "salitang susi" na sa Pamamaraang Maugnayin ay kailangang ituro sa lahat ng mga bata sa mababang paaralan sa una at ikalawang baitang. Kasama rito ang mga batayang dalumat tulad ng bilang (number), dami (quantity), haba (length), atb. Maraming mga tawag ang napasama sa mga "salitang susi" hindi lamang sa kanilang kahulugan kundi sa dahilang sila ay maliwanag na naglalarawan ng mga tiyak na pamamaraan ng palabuuan ng salita sa Pilipino. Sa pagsasanay sa mga salitang yaon sa mga murang gulang, lagi nang matatanim sa isip ng mga mag-aaral sa mababang paaralan ang mga kaukulang palabuuan ng mga salita.

Pang-apat, lahat ng siyam na talasalitaan ay maugnayin sa may humigit-kumulang na 30,000 maugnaying tawag at tumpak na paggamit na nakapanid sa LUNSAG **(Lunduyang Simpanan ng mga Salitang Agham)**, mga talaturuang panid na sinisimpan ng Kagawaran ng Aghimuing Pilipino ng pamantasang ito.

Ang isip ng tao ay mabilis na natututo, nakapanganganatwiran nang mabuti at nakapag-iisip nang lalong malikhain kapag maraming landas ng pagkakaugnayan sa mga salita, tawag at pahayag ng wikang ginagamit. Sagitan ng hakbang na ito sa **Palagawaang Araneta-PLPA sa Katawagan para sa Salipat ng Aghimuan sa Kabukiran,** umaasa kami na nakasulong kami nang malaki tungo sa malawak na saunlad ng agham at aghimuan sa bansang ito.

GONSALO DEL ROSARIO
Pamuno ng Panukala

Hulyo 15, 1978

PREFACE

The **Araneta-NSDB Terminology Program for Technology Transfer to Rural Areas** is a language planning program financially assisted by the NSDB (National Science Development Board) under its Project No. NSDB-GAUF 7706 Spi. It is designed to compile, as an initial step, nine (9) basic and interrelated 1000-entry vocabularies or word lists of technical Pilipino terms and expressions, structured according to the Maugnayin Approach, in the following specific technological areas:

1. Applied Mathematics
2. Applied Sciences
3. Family Planning
4. Agriculture
5. Agricultural Engineering
6. Animal Husbandry
7. Veterinary Medicine
8. Forestry
9. Journalism and Publishing

All previous word lists or vocabularies in Pilipino, including those in Maugnaying Pilipino published by the **Lupon sa Agham,** a Pilipino translation committee sponsored by the UNESCO National Commission of the Philippines in 1965, contained mostly general terms and expressions in the pure sciences; there was none offering specific, rigorous and systematic entries like those found in the nine vocabularies compiled under this Program. These nine word lists are profession-oriented and would make possible the preparation of adequate textbooks for all the collegiate technological courses offered in the **Gregorio Araneta University Foundation** as well as for similar courses in other colleges and universities.

Family Planning is not a main curricular area but it has been included as a separate project of the Program because of its relevance today and because the effectiveness of Maugnaying Pilipino was first demonstrated in this field.

The general plan of the Program was for each of nine qualified and experienced faculty members of the University's **Department of Technical Pilipino** to team up with one qualified and experienced faculty member in

each of the technological or science institutes of GAUF. Each team thus formed then collected, semantically analysed, standardized and tested terms and expressions in the team's particular field. The nine technological vocabularies thus produced have been published as convenient booklets each 9 inches wide, 7.5 inches long and of about 50 pages.

The work was started on February 16, 1978 and was completed on July 15, 1978.

Professionals and practitioners have decried the lack of books and other publications written in technical Pilipino, and this was due to the lack of systematic and authoritative vocabularies in the different technological fields. So far, no educational institution aside from the Gregorio Araneta University Foundation has combined language expertise with technology and come foreward to supply this important need. Some of the others prefer to believe that technical vocabularies will spontaneously evolve in due time. This may be so in the long run, but the time frame involved would be unacceptably long; it may be measured in centuries instead of in school semesters.

The Maugnayin Approach utilizes word derivations based on root words, affixes, combining forms and word formation that are already known, or may be easily explained, to rural manpower in this country which has a strong Malayo-Polynesian language background. The Maugnayin Approach frowns upon the indiscriminate use of foreign loanwords, especially those incorporating many Greek and Latin combining forms that are not easy to explain to those who are not native speakers of European languages. However, the scientific names of plants and animals (ex. **Terminalia catappa** for the talisay tree) will be retained in order not to disturb identification.

It is hoped that college graduates who will henceforth study the agricultural and related courses using textbooks written in technical Pilipino, prepared according to the Maugnayin Approach as described above, would find it possible to transfer technology to manpower in the rural areas.

There are four characteristics of the nine vocabularies or word lists developed in this Program which will

facilitate their integration into the whole body of maugnayin terminology.

First, they are all consistent and interrelated with the entries in the "Maugnaying Talasalitaang Pang-Agham, Ingles- Pilipino" published by the UNESCO-sponsored **Lupon sa Agham** in 1969. This general science vocabulary contains some 7,500 words, terms and expressions.

Second, the first 350 entries of each of the nine booklets are identical in order to provide all nine professional areas with the same core or nucleus of fundamental science terms.

Third, of the 350 entries, 200 are the "Key Words" which, in the Maugnayin Approach, must be taught to all elementary school children in their first and second grades. They include such very basic concepts as number (bilang), quantity (dami), length (haba), etc. Many terms have been included among the "Key Words" not primarily because of their meanings but because they clearly illustrate distinct methods of word formation. By mastering such words at an early age, elementary school children will indelibly internalize in their minds the corresponding word morphologies.

Fourth, all the nine vocabularies are consistent with the approximately 30,000 maugnayin terms and actual usages catalogued in the LUNSAG (Lunduyang Simpanan ng mga Salitang-Agham) or **Central Repository of Science Words,** a card file being maintained and continually updated by the Department of Technical Pilipino of this University.

The human mind learns faster, reasons better and thinks more creatively when there are many pathways of interrelatedness between and among the words, terms and expressions of the language used. With this step in the **Araneta-NSDB Terminology Program for Technology Transfer to Rural Areas,** we hope to have taken a giant stride on the road towards the intensive development of science and technology in this country.

GONSALO DEL ROSARIO
Project Leader

July 15, 1978

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A. MGA KARANIWANG SALITANG PANG-AGHAM (Common Science Words)

1. abstract	basal
2. academic	pantalisikan
3. action	gawa, bilos
4. activity	kabilusan
5. address	padalahan
6. adviser	tagapayo
7. again	muli
8. agenda	tikmaan
9. airman	manlilipad
10. album	tipunan
11. always	lagi
12. amount	daghan
13. analogy	palasurian
14. analysis	suri
15. announcement	pabatid
16. arc	bantok
17. area (in general)	lawak
18. area (specified)	dawak
19. around	palibot
20. arrangement	ayos
21. artificial	gawa-gawa
22. assistant	kawaksi
23. atmosphere	kaanginan
24. attendance	sadalo
25. autobiography	sariltalambuhay
26. average	balasak
27. axis	taluhog
28. base	takad
29. big, great, grand	malaki, dako
30. bilingual	dalwikain
31. biology	haynayan
32. body (inorganic)	lawas (Hlg.)
33. booklet	muntaklat
34. bulletin board	paskilan
35. by means of	sagitan ng
36. campus	kampusan
37. candidate	halangad
38. canteen	manganan (Kpn.)
39. capacity	lulan

40. car	batlag
41. cash (money on hand)	salapıng-hawak
42. cashier	ingatsalapi
43. center	lunduyan
44. ceremony	galian
45. certain	tiyak
46. change	baylo (Bis.)
47. chaplain	kapelyan
48. chart	taltaguhit
49. chemistry	kapnayan
50. circular letter	palibot-sulat
51. civilization	kabihasnan
52. clearance	hisagutin
53. clinic	gamutan
54. closed	pinid
55. coldness	lamig
56. cold season	taglamig
57. college, institute	dalubhasaan
58. committee	lupon
59. communication	talamitam
60. companion	abay
61. complete	ganap
62. composite	lakip
63. compute	tuos
64. concavity	lukong
65. concept	dalumat
66. condense	kintay
67. conscious mind	malay
68. consistently interrelated	maugnayin
69. consultant	kasangguni
70. convexity	lukob
71. copyright	karapatang-akda
72. correct	wasto
73. create	likha
74. creative	malikhain
75. cultural	pangkalinangan
76. culture	kalinangan
77. curved	kilo
78. cylinder	bumbong
79. cylindrical	binumbong
80. date	taburaw
81. dean	dalubpuno
82. decrease	bawas

83. definition	katuringan
84. delivery	hatid
85. dense	siksik
86. design	antang (Mar.)
87. development	saunlad
88. deviation	lihis
89. dictionary	talatinigan
90. digestion	satunaw
91. direction	tungo
92. director	patnugot
93. directory (gen.)	talahanapan
94. disconnection	tanggal
95. distance	agwat
96. doctor (Ph.D.)	pantas
97. dormitory	panuluyan
98. draft	waki
99. duration	lawig
100. earth	duta (Bis.)
101. edge	gilid
102. education (as a system)	paturuan
103. effect	bisa
104. electricity	dagitab
105. elevator	sigtas
106. emeritus	higitlingkod
107. employee	kawani
108. encyclopedia	santalaalaman
109. endorsement	satukoy
110. energy	kusog (Bis.)
111. engineer	agsikap
112. environment	kapaligiran
113. epic	darangan (Mar.)
114. erase	payi
115. escalator	sigdan
116. estimate	taya
117. ethics	palaasalan
118. evaluation form	talahalgahan
119. even (Math.)	tukol
120. exact	singkad
121. excess	labaw (Hlg.) labis
122. exercise (physical)	sabanat
123. experiment	tilaw (Bis.)
124. extreme	sukdulan
125. facilities	kaluwagan

126. faculty (Ed.)	kaguruan
127. family	angkan
128. fee	bayad
129. field	larang
130. figure	laraw
131. filing cabinet	salansanan
132. firmness	katatagan
133. flight	lipad
134. focus	tingod (Hlg.)
135. folder	ipitan
136. force	isig (Mat. Tag.)
137. form	anyo, anyuan
138. formal	maanyo
139. foundation	takaran
140. gather together	lagom
141. general	lahatan
142. glossary	talahulugan
143. graduate school	dalubhasikan
144. grain	butil
145. grandstand	dakmasiran
146. granular	malabutil
147. gravity	dagsin (Ilk.)
148. group	lipon
149. hall	bulwagan
150. hidden	kubli
151. husband	bana (Bis.)
152. hymn	santinig
153. idea	kaisipan
154. identification (I.D.)	pangilala
155. imperfect (Math.)	balhag
156. imperfect (gen.)	di-himpit
157. increase	dagdag
158. increase of speed	dasig (Bis., Bkl.)
159. indigestion	di-satunaw
160. indirect measurement	sukod
161. infra—(comb. form)	sulud—(Bis.)
162. instant	dagli
163. intention	sadya
164. intermission	panalingit
165. invocation	panawagan
166. involvement	sadawit
167. irrigation	patubig

168. jargon	wiwika
169. jeopardy	sanganib
170. Junior (Jr.)	Anak (Ak.)
171. justice	katarungan
172. juvenile	kabataan
173. kilogram	libogramo
174. kilometer	libometro
175. kin	hinlog, kaanak
176. kind	uri
177. leader	pamuno
178. lecture	panayam
179. lesson	aral
180. life	buhay
181. light (optics)	suga (Hlg.)
182. limit	takda
183. lobby	lisawan
184. log book (attendance)	taladaluhan
185. lore	alamin
186. major (Ed.)	kalakhan
187. majority	karamihan
188. masses	santao
189. master (degree)	paham
190. mathematics	sipnayan
191. measuring scale	sukatan
192. memorandum	paandam
193. messenger	tagahatid
194. Metro-Manila	Dak-Maynila
195. microphone	miktinig
196. middle	gitna
197. mimeograph	limwad
198. mind	isip
199. minor (Ed.)	kalit-an
200. minor (Gen.)	maliit
201. minutes of a meeting)	katitikan
202. more than	higit sa
203. motion	kilos
204. movement	kilusan
205. multiple	lambal
206. name (Ling.)	ngalan
207. narrate	saysay
208. natural	likas
209. nerve	dagandam
210. next	sunod

211. none (zero) awan (Ilk.)
212. notebook aklat-talaan
213. novel kathambuhay
214. nucleus butod
215. number bilang
216. observation masid
217. obstacle hadlang
218. odd (Math.) gansal
219. official tungkulanin
220. one hundred thousand yuta
221. organization katatagan
222. organ tatag
223. orientation satungo
224. orthography palatitikan
225. out of the regular liwas
226. outstanding katangi-tangi
227. park liwasan
228. parliament batasan
229. part hati, bahagi
230. particle tipik
231. patent karapatang-tuklas
232. permission tulot
233. philosophy batnayan
234. physics sugnayan
235. pierce tuhog
236. place lunan
237. population santauhan
238. positive tahas
239. practice sanay
240. press release ngalandakan
241. process saayos
242. profession panungkulan
243. professor dalubguro
244. programme talatuntunan
245. progress unlad
246. proper tumpak, angkop
247. prosody palabigkasan
248. prosperity kaniguhan
249. psychology dalub-isipan
250. publication lathalain
251. radio diglap
252. real tunay
253. receipt dawat

254. record	tala
255. reduction	maliw
256. referendum	pagtutukoy
257. region	danay (Bis.)
258. related	kaugnay
259. religion	agamahan (Mar.)
260. remainder	labi
261. report	ulat
262. repository	simpanan
263. repulsion	sikway (Hlg.)
264. result	bunga, kinalabasan
265. retail	tingi
266. return	balik
267. review	balik-aral
268. revision	mulinyos
269. revolution (Mech.)	ikit
270. revolve	ligid
271. rotation	inog
272. rural	pangkabukiran, kabukiranin
273. scholar	paaral
274. science	agham
275. science museum	tanyagang agham
276. score	lubig
277. seedling	binhi
278. sediment	tining
279. semester	hatintaon
280. seminar 0	binhisipan
281. Senior (Sr.)	Ama (Am.)
282. sense	dandam
283. shape	hugis
284. sign	tanda
285. simlarity	hawig
286. small things	mikmik
287. social sciences	ulnayan
288. society (in general)	ulnong (Ilk.)
289. solid	siksin
290. solve (a problem)	lutas
291. source	mula
292. sowing	hasik
293. special	tangi
294. speed	bilis
295. sports	sanlaruan

296. spread	latag
297. square	parisukat
298. star	tala
299. steel	paslip (Ilk.)
300. stoppage	tigil
301. straight	tuwid
302. student	mag-aaral
303. subconscious mind	kubmalay
304. substance	sangkap
305. summary	buod
306. surface	dayag
307. surname	alangkan
308. switch	kabtol
309. syntax	palaugnayan
310. system	kaayusan
311. table of contents	talalamanan
312. tactics	paagi (Bis.)
313. technical	aghimuin
314. technology	aghimuan
315. telephone	hatinig
316. television	tanlap
317. term	tawag
318. term paper	sultaning
319. thermometer	initsukat
320. thermostat	initsupil
321. thesis	tikha
322. thought	isipin
323. thrust	sikad
324. time	takna (Bis.)
325. tone	linig
326. top	tuktok
327. track	tunton
328. training	pasanayan
329. treasurer	ingatyaman
330. trunk	puno
331. trustee	katiwala
332. typewriter	limbitan
333. typewriting paper	papel-limbitan
334. typist	manlilimbit
335. university	pamantasan
336. unnatural	dilikas
337. unravel	nisnis
338. urban	panlunsod

339. vapor	singaw
340. velocity	tulin
341. vice-president	puli-pangulo
342. vocabulary	talasalitaan
343. vocational	hanapbuhayin
344. voice	tinig
345. volume	buok
346. voluntary	kusa
347. vote (in an election)	halal
348. whole	buo
349. world	daigdig
350. writings	panulatan

B. KATWANAN
(Anatomy)

B. NGALAN NG MGA BAHAGI NG LAHATANG AGHAM
(Names of the Branches of General Science)

PHYSICS	SUGNAYAN
351. Statics	Tigilan
352. Dynamics	Isigan
353. Heat	Initan
354. Acoustics	Tunugan
355. Optics	Sugaan
356. Magnetics	Balnian
357. Electricity	Dagitban
358. Electronics	Dagisikan
359. Nucleonics	Buturan
360. Astronomy	Dalubtalaan
361. Geology	Paladutaan
362. Mechanism	Palasigmuan
CHEMISTRY	**KAPNAYAN**
363. Chemical Structure	Kapnaying Kayarian
364. Analytical Chemistry	Suriing Kapnayan
365. Organic Chemistry	Haying Kapnayan
366. Electrochemistry	Dagikapnayan
367. Industrial Chemistry	Kalalanging Kapnayan
BIOLOGY	**HAYNAYAN**
368. Cytology	Palasihayan
369. Botany	Dalubhalmanan
370. Zoology	Dalubhayupan
371. Biochemistry	Haykapnayan
372. Biophysics	Haysugnayan

K. LAHATANG KATAWAGAN SA SUGNAYAN
(General Terminology in Physics)

373. physical (adj. 1)	sugnayin
374. physical (adj. 2)	sugnayanin
375. physics worker	mansusugnay
376. physicist	sugnayanon
377. supernatural	higlikas
378. mechanics	sigwasan
379. mechanism (system)	sigmuan
380. hydraulics	danumsigwasan
381. pneumatics	buhagsigwasan
382. hydrostatics	danumtigilan
383. aerostatics	angintigilan, buhagtigilan
384. electrostatics	dagitigilan
385. hydrodynamics	danum-isigan
386. aerodynamics	hanginsigan
387. electrodynamics	dagitsigan
388. kinematics	lihukan
389. thermics, science of heat	(dalub)-initan
390. thermodynamics	initsigan
391. acoustical	tiniganin
392. sound (general sense)	tunog
393. phonology	dalubtinigan
394. phonemics	multinigan
395. phonics	sanaytinigan
396. sonics	dalubnugan **(dalub** + **tunugan)**
397. supersonic	hignugin **(higit** + **tunugin)**
398. subsonic	kubnugin **(kubos** + **tunugin)**
399. wave motion	aluning kilos
400. amplitude	hagkis
401. optics	(dalub)sugaan
402. optical system	kaayusang sugaanin
403. radiation (not radio-active)	dagalat
404. incandescent	nagbabaga
405. illumination	liwanag
406. atomics, atomic physics	(dalub)mulpikan
407. metaphysics	labawsugnayan
408. technics, technique	aghmo **(agham** + **himo)**

409. technologist	mang-aaghimuan
410. component force	kabuong isig
411. resultant force	kinalabasang isig
412. vector	tugano **(tungo + gaano)**
413. pole	taluktok
414. magnetism	kabalnian (kabalanian)
415. attraction	higom
416. electric charge	tablay (dagi**tab** + **tag**lay)
417. positive charge	tahas na tablay
418. negative charge	baling na tablay
419. cathode (negative elec.)	balindas **(bal**ing + dagin**das)**
420. anode (positive elec.) . .	tahandas **(tahas** + dagin**das)**
421. electron	dagisik (Mat. Tag.)
422. electronic (adj.)	dagisikin
423. radiation (radioactive)	dagilap
424. radar	siglap (Mat. Tag.)
425. radioactivity	karagilapan
426. atom	mulapik **(mula**ang **tipik)**
427. molecule	mulatil **(mula**ang bu**til)**
428. particle	tipik
429. nucleus	butod
430. isotope	kahasik
431. ion	dagipik **(dagi**tab + **tipik)**
432. fission (nuclear)	pagsipak (buturin)
433. fusion (nuclear)	sapisan (buturin)
434. current	saloy
435. electrification	sadagitab
436. electric generator	likhitab **(likh**a + dagi**tab)**
437. astronomer	dalubtala
438. satellite	buntabay
439. astronomical body	lawas na dalubtalan-in
440. constellation	talanyo
441. galaxy	sanlibutan
442. terrestrial	dutain
443. meteor	bulalakaw
444. geologic	pandutaan
445. mineralogy	lupangkapan
446. weathering	pagkagabok
447. erosion	sapudpod
448. granite	batumbakal
449. basalt	batumbesi, tumbesi

450. lodestone	batubalani

K-1. MGA ISAHIN NG SUKAT AT SUKOD (Units of Measurement and Dimension)

451. newton	nyuton
452. joule	dyul
453. dyne	dina
454. erg	ergi
455. erg per second	ergi bawat saglit
456. foot-pound	talampakan-libra
457. poundal	librahin
458. watt	wat
459. calorie	kalori
460. centigrade scale	sukurang sentigrado
461. fahrenheight scale	sukurang parenhait
462. absolute scale	sukurang wagas
463. Kelvin Scale	sukurang Kelbin
464. bel	bel
465. decibel	desibel
466. Mach	Mak
467. candle (unit of illumination)	kandila
468. foot-candle	talampakan-kandila
469. lumen	lumen
470. quantum	kuwantum
471. coulomb	kulom
472. ampere	ampir
473. volt	bolt
474. ohm	om
475. farad	parad
476. henry	henri
477. weber	weber
478. oersted	ursted
479. maxwell	makswel
480. gauss	gos

K-2. MAHAHALGANG SUGNAYING LAGIIN (Important Physical Constants)

481. acceleration of gravity	g	darasig ng dagsin
482. speed of light	c	bilis ng suga
483. gravitational constant	G	dagsining lagiin

484. molar volume of ideal gas V	molning buok ng ulirang buhag
485. electronic charge . . . . e	dagisiking tablay (dakil)
486. standard atmospheric pressure 14.7	pamantayang kaanginaning diin, libra bawat daling parisukat
487. Boltzmann's constant k	lagiing Boltsman
488. density of water, maximum ρH_2O	kasiksikan ng tubig, digdulin
489. charge-to-mass ratio of electron e/m	tablay-sa-bugat na tagway ng dagisik
490. ice point . . . . . T	tungos ng yelo

D. LAHATANG KATAWAGAN SA KAPNAYAN (General Terminology in Chemistry)

491. general chemistry	lahatang kapnayan
492. raw material	hilaw na sangkap
493. qualitative chemistry	uriing kapnayan
494. quantitative chemistry	sukating kapnayan
495. chemical (adj. 1)	kapnayin
496. chemical (adj. 2)	kapnayanin
497. chemist (scientist)	kapnayanon
498. chemist (registered)	mangangapnay
499. chemical change	kapnaying baylo
500. decomposition (chem. process)	pagbungkag, pagkabungkag
501. oxidation (chem.)	sadagisik
502. concentration (gen.)	lapot
503. solution	kaluswan (kalusawan)
504. dilute solution	binantuang kaluswan
505. viscous	malapuyot
506. pure	tagnas
507. purify	tagnasin
508. refined (adj.)	dalisay, dinalisay
509. decant	itigis
510. sedimentation	patining
511. residue (of filtration)	nasala
512. residue (of evaporation)	tira
513. precipitate (v.)	sahimuo **(sa- + hi- + buo)**
514. coagulation	samuo **(sa- + buo)**

515. evaporation	sahisingaw
516. vaporization	sasingaw
517. distillation	singawkintay
518. vacuum	awangin
519. condensation	sakintay
520. ebullition	pagkukumulo
521. fusion (mech.)	pamumuok
522. boiling point	tungos ng pagkulo
523. heat of vaporation	init ng sasingaw
524. heat of formation	init ng sabuo
525. stability of compound	katatagan ng isang balangkap
526. endothermic reaction	sulud-initing balibilos
527. solidification	sasiksin
528. liquefaction	sadanum
529. gasification	sabuhag
530. vapor phase	singawing yugto
531. steam	tubingaw **(tubig + singaw)**
532. ionization (of gases)	sadagipik
533. diffusion (chem.)	panunuot
534. dispersion	pagkalat
535. dispersion medium	talaytayan ng pagkalat
536. tension	igting
537. colloid	maladigkit
538. colloidal suspension	maladigkiting kabitnan
539. lyophilic colloid	danumhiguming maladigkit
540. hydrophilic colloid	tubighiguming maladigkit
541. emulsion	lapunaw
542. mixture	halungkap **(haluang sangkap)**
543. homogeneity	tulad-uri
544. heterogeneity	dam-uri
545. crystalline	bubugin
546. hygroscopy	paghulas
547. treat (as substance with another)	sampawan (ng isang sangkap ang iba)
548. yield (a product)	maghatag (ng isang bunga)
549. driving force of reaction	budlunging isig ng isang balibilos

550. replacement	palitambal **(palit + tambal)**
551. catalysis	ganapbilos
552. inhibition	sansala
553. alkali metal	alkang metal
554. chemical calculation	kapnayaning pagtaya
555. hyperalkalinity	sukdulkaalkahan
556. combustion	liyab, pagliliyab
557. ignition	duop
558. flash (of combustion)	siklab
559. smoldering	paglalatang
560. flammable	ningasin
561. iridescence	silak, kasilakan (Bis.)
562. phosphorescence	pospowanag **(posporus + liwanag)**
563. luminiscence	sanag, kasanagan, (Bis.)
564. detonation	pagdiglap
565. covalent compound	kakalwinging balangkap
566. chemical symbol (notation)	kapnayaning halat
567. empirical formula	masiring sanyo
568. Chemical Bond Approach	Kapnaying-Bigkis na Aral
569. valence	kalwing **(kalawit + kawing)**
570. radical	mulipon **(mulaang lipon)**
571. allotrope	kamulkap **(kasama + mulangkap)**
572. periodic table	talaulitan
573. ion-electron method	pamamaraang dagipik-dagisik
574. periodic property	uliting kaangkinan
575. zinc sulfide screen	tabing na sink sulpad
576. lead shield	sanggang tingga
577. amperage	kaampiran
578. threshold voltage	giliring kaboltahan
579. charge cloud	tinablayang ulap
580. energy barrier	kusuging hadlang
581. electron cloud	dagisik-ulap
582. massive crystal	bugating bubog
583. effusion rate	kabilsan ng panlalagos
584. polarity	kataluktukan
585. spectrum, spectra	balangaw

586. spherical model (pattern)	timbuluging hulwaran
587. Bohr model of the atom	hulwarang Bohr ng mulapik
588. gross energy level	kabuuang kapantayan ng kusog
589. quantum (unit of energy)	kuwantum
590. catalytic activity	ganapbilusing kabilusan
591. potential energy	biniting kusog
592. energy absorbed	kusog na sinigom
593. gram-atom (unit)	gram-atom
594. solute	nilusaw, lulusawin
595. miscible	haluin
596. satúrate	tigmak
597. neutral	awanling (awang kiling)
598. concentration (anal.)	damsik **(dami** + **siksik)**
599. reverse reaction	tumbalik na balibilos
600. ebullioscope (n.)	kulunsipat
601. isomer	kasanyo **(kaisang anyo)**
602. cyclic	salkupin (salikupin)
603. aliphatic	malatabain
604. aromatic	sanghayain
605. alkaloidal	malaalkahin
606. wax, beeswax	pagkit
607. paraffin	malapagkit
608. hydrocarbon	haydrokarbon
609. biochemist	haykapnayanon
610. anabolism	kapyari
611. katabolism	kapsira
612. decay (1st odoriferous stage)	pagkabulok
613. decomposition (natural process)	pagkadunot
614. decomposition (chem. process)	pagkaagnas
615. fermentation	pamamanis, pagkapanis
616. chloroplast	luntikatwan
617. positron	tahasik **(tahas** + **hasik)**
618. betatron	betatron, pandarasig-beta
619. cosmotron	kosmotron, pandarasig-mayaw
620. linear acceleration	tuwiring pandarasig

621. nuclear bombardment	tampol-butod
622. cloud chamber	paulapan
623. geiger counter	pamilang-gayger
624. dosimeter	tambadsukod
625. control rod	tandos-panupil

D-1. MGA BATAS, SIMULAIN AT HUNA (Laws, Principles and Theories)

626. Law of Periodicity (Periodic Law)	Batas ng Kaulitan (Uliting Batas)
627. Law of Definite proportion	Batas ng Turing na Hagway
628. Law of Partition	Batas ng Paghahati
629. Law of Mass Action	Batas ng Bugating Bilos
630. Law of Partial Pressures	Batas ng Bahaging Diin
631. Pauli Exclusion Principle	Simulaing Hisama ni Pauli
632. Ionization Theory	Huna ng Sadagipik
633. Quantum Theory	Damuing Huna
634. Molecular Orbital Theory	Mulatling Ligiraning Huna
635. Mole Concept	Dalumat sa Mol
636. Law of Combining Weights	Batas ng Lakiping Bigat
637. Boyle's Law of Gases	Batas ng Buhag ni Boyle
638. Schroedinger Wave Equation	Libuying Tumbasang Schroedinger
639. Broensted-Lowry Concept of Acids and Bases	Dalumat sa Asid at Tangkap nina Broensted-Lowry
640. Modern Theory of Ionization	Makabagong Huna sa Sadagisik
641. Kinetic-Molecular Theory	Kilusin-Mulatling Huna
642. Van Der Waals Equation	Tumbasang Van Der Waals

D-2. ANG MGA MULANGKAP (The Elements)

643. hydrogen	H	haydrohen
644. helium	He	helyum
645. lithium	Li	. . . . . lityum

646. beryllium	Be	berilyum
647. boron	B	boron
648. carbon	C	karbon
649. nitrogen	N	nitrohen
650. oxygen	O	oksihen
651. flourine	F	plorin
652. neon	Ne	neyon
653. sodium (natrium)	Na	sodyum
654. magnesium	Mg	magnisyum
655. aluminum	Al	aluminum
656. silicon	Si	silikon
657. phosphorus	P	posporus
658. sulfur	S	asupre, malilang, sulpur
659. chlorine	Cl	klorin
660. argon	A	argon
661. potassium (kalium)	K	potasyum
662. calcium	Ca	kalsyum
663. scandium	Sc	iskandiyum
664. titanium	Ti	titanyum
665. vanadium	V	banadyum
666.chromium	Cr	kromyum
667. manganese	Mn	mangganis
668. iron (ferrum)	Fe	bakal
669. cobalt	Co	kobalt
670. nickel	Ni	nikel
671. copper (cuprum)	Cu	tanso
672. zinc	Zn	sink
673. gallium	Ga	galyum
674. germanium	Ge	hermanyum
675. arsenic	As	arsenik
676. selenium	Se	selenyum
677. bromine	Br	bromin
678. krypton	Kr	kripton
679. rubidium	Rb	rubidyum
680. strontium	Sr	istrontiyum
681. yttrium	Y	itriyum
682. zirconium	Zr	sirkonyum
683. niobium	Nb	nayobyum
684. molybdenum	Mo	molibdenum
685. technetium	Tc	teknisyum
686. ruthenium	Ru	rutenyum
687. rhodium	Rh	rodyum

688. palladium	Pd	paladyum
689. silver (argentum)	Ag	pilak
690. cadmium	Cd	kadmiyum
691. indium	In	indiyum
692. tin (stannum)	Sn	tinggaputi
693. antimony (stibium)	Sb	antimuni
694. tellurium	Te	teluryum
695. iodine	I	yodin
696. xenon	Xe	senon
697. cesium	Cs	sesyum
698. barium	Ba	baryum
699. lanthanum	La	lantanum
700. cerium	Ce	seryum
701. praseodymium	Pr	praseyodimyum
702. neodymium	Nd	neodimyum
703. promethium	Pm	prometyum
704. samarium	Sm	samaryum
705. europium	Eu	yuropyum
706. gadolinium	Gd	gadolinyum
707. terbium	Tb	terbiyum
708. dysprosium	Dy	disprosyum
709. holmium	Ho	holmiyum
710. erbium	Er	erbiyum
711. thulium	Tm	tulyum
712. ytterbium	Yb	iterbiyum
713. hafnium	Hf	hapniyum
714. lutetium	Lu	lutesyum
715. tantalum	Ta	tantalum
716. tungsten (wolfranium)	W	tungsten
717. rhenium	Re	renyum
718. osmium	Os	osmiyum
719. iridium	Ir	iridyum
720. platinum	Pt	platinum
721. gold (aurum)	Au	ginto
722. mercury (hydrargyrum)	Hg	asoge
723. thallium	Tl	talyum
724. lead (plumbum)	Pb	tingga
725. bismuth	Bi	bismut
726. polonium	Po	polonyum
727. astatine	At	astatin
728. radon	Rn	radon
729. francium	Fr	pransyum
730. radium	Ra	radyum

731. actinium	Ac	aktinyum
732. thorium	Th	toryum
733. protactinium	Pa	protaktinyum
734. uranium	U	uranyum
735. neptunium	Np	neptunyum
736. plutonium	Pu	plutonyum
737. americium	Am	amerisyum
738. curium	Cm	kuryum
739. berkelium	Bk	berkelyum
740. californium	Cf	kaliporniyum
741. einsteinium	E	ensteinyum
742. fermium	Fm	permyum
743. mendelevium	Md	mendelebyum
744. nobelium	No	nobelyum
745. lawrencium	Lw	lawrensyum

D-3. MGA LARAWANING KATAWAGAN AT KANGALANAN NG MGA KAPNAYING SANGKAP
(Descriptive Terms and Nomenclature of Chemical Substances)

746. alkali	alka
747. alkaline	maalka
748. alkalinity	kaalkahan
749. acid	asid
750. acidic	maasid
751. acidity	kaasdan, pagkaasid
752. acidify	asidin, gawing asid
753. acid-forming	palaasid
754. base	tangkap **(takad na sangkap)**
755. basic	tangkapin
756. basic substance	tangkaping sangkap
757. basicity	katangkapan
758. halogen	halohen
759. anhydrous (adj.)	awanhaydrohan
760. anhydrite (min.)	awanhaydrito

D-4. MGA PANAMBAL PARA SA KAPNAYANING KANGALANAN
(Combining Forms for Chemical Nomenclature)

761. —ide	—ad
762. —ate	—at

763. —ite	—it
764. —ic	—ik
765. —ium	—yum
766. —lysis	—bilos
767. —ane	—an
768. —yne	—ain
769. —diene	—dyen
770. —oic	—oik
771. —oate	—oat
772. iso—	ka—
773. hypo—	kubus—
774. thio—	malil—, malila—
775. per—	hig—
776. ortho—	daniw—
777. meta—	hangu—
778. para—	tapat—
779. pyro—	apuy—
780. cyclo—	salku—

D-5. DAGIPIK AT MULIPON NG MGA BALANGKAP (Ions and Radicals of Compounds)

Positive Ions and Radicals	Mga Tahas na Dagipik at Mulipon
781. oxonium	oksonyum
782. hydronium	haydronyum
783. ammonium	amonyum
784. nitrous	nitros
785. nitric	nitrik
786. cuprous	kupros
787. ferrous	peros
788. hypochlorous	kubuskloros
789. hypochloric	kubusklorik
790. metaphosphoric	hanguposporik
791. phosphorus	posporos
792. monosodium	isansodyum

Negative Ions and Radicals	Mga Baling na Dagipik at Mulipon
793. oxide	oksad
794. monoxide	sanuksad
795. dioxide	daluksad
796. peroxide	higuksad

797. hydride	haydrad
798. carbonate	karbonat
799. carbide	karbad
800. nitride	nitrad
801. sulfate	sulpat
802. thiolsulfate	malilsulpat
803. hypochlorite	kubusklorit
804. bromate	bromat
805. cynide	siyanad

E. LAHATANG KATAWAGAN SA HAYNAYAN (General Terminology in Biology)

806. biological (adj.)	haynayin
807. biological (adj.)	haynayanin
808. biologist	haynayanon
809. biological worker	manghahaynay
810. granule	binutil
811. vacoule	lungkag
812. microbiology	mikhaynayan
813. microanalysis	miksurian
814. microtome	mikgayat
815. kingdom	anyuhay **(anyo** ng **buhay)**
816. phylum	sangahay **(sanga** ng **buhay)**
817. subphylum	kubsanghay
818. class	lipihay **(lipi** ng **buhay)**
819. order	sunudhay **(sunod** ng **buhay)**
820. suborder	kubsunday
821. family	angkanhay **(angkan** ng **buhay)**
822. subfamily	kub-angkanhay
823. genus	urihay **(uri** ng **buhay)**
824. plasma	kaphay (sang**kap** ng **byhay)**
825. evolve	sunlad **(sulong** + **unlad)**
826. evolution	kasunlaran
827. theory of evolution	huna ng kasunlaran
828. generation (of a living form)	salinhay
829. generation (racial)	salinlahi
830. generation (of individuals)	salintao

831. alteration of generation	halinhinan ng salinhay
832. spontaneous generation	kusang pagkalikha
833. regeneration	balikhaan
834. regenerate (v.)	balikhain
835. regenerative (adj.)	balikhain
836. reproduction	balisuplingan
837. reproduce	balisuplingin, magbalisupling
838. reproductive, genital	balisuplingin
839. sex (as a distinction)	sari
840. sex (as a situation)	kasarian
841. sexual	sariin
842. asexual	awansariin
843. unisex	sansariin
844. bisexual reproduction	duhansariing balisuplingan
845. new form of life	banyuhay (**bagong anyo** ng **buhay**)
846. metamorphosis, metamorphism (process)	pagbanyuhay
847. metamorphose (v.)	magbanyuhay, bumanyuhay
848. mutant	ibanyuhay
849. mutation (process)	pag-ibanyuhay
850. mutate	mag-ibanyuhay
851. diversity	kayamuan
852. variation	kaaligan
853. combination	palakipan
854. recombination	balilakipan
855. differentiation (bio.) . . .	pag-iiba
856. adaptation (n.)	saangay (Bis.)
857. adaptation (process)	angayan
858. to adapt (a thing to another)	iangay, saangayin
859. to adapt (one's self)	umangay
860. selection	pilian
861. survival	lighay (**ligtas** + **buhay**)
862. survival of the fittest	lighay ng pikakaangkop
863. exist (v.)	may, mayroon
864. being	kamagingan (maging)
865. existence	kamayhan, kamayrunan
866. struggle for existence	pakikibaka sa kamayhan
867. dependence	salig

868. interdependence	saligan
869. symbiosis	salighayan **(salig** + **buhay** + **an)**
870. balance of life	katimbangan ng buhay
871. cycle	ikot
872. cycle of life, life cycle	ikot-buhay
873. membrane (cytological)	lamad
874. classify	pag-uri-uriin
875. classification	palaurian
876. ecological classification	palamuhaying palaurian
877. scientific classification	maaghaming palaurian
878. phylogeny	lipmulaan **(lipi** + **mulaan)**
879. Linnean System	Linehing Kaayusan
880. higher forms of life	matataas na anyo ng buhay
881. animate	buháy
882. inanimate	díbuháy
883. organic (1)	hayin (buhayin)
884. organic (2)	taghayin **(tatag** + **buhay** + **-in)**
885. inorganic	dihayin
886. living thing	katubaghay (katutubong bagay na may buhay)
887. histology	palasihayanan
888. organology	palatatagnan
889. physiology	liksanan (likasanan)
890. anatomy	katwanan
891. morphology (bio.)	palaanyuan
892. morphogenesis	mulanyuan
893. organism	tataghay **(tatag** + **buhay)**
894. microorganism	miktataghay
895. microbe	mikhay **(mik** + **buhay)**
896. germ	binhay
897. bacterium, bacteria	ishay **(isa**hing silid ng bu**hay)**
898. virus	haykap (bagay na malabu**hay** at malasang**kap)**
899. habitat	tirahanan
900. habitation	tirahan
901. aquatic organism	tubigning tataghay
902. terrestrial organism	dalatning tataghay
903. arboreal organism	kakahuyning tataghay
904. aerial organism	hangining tataghay

905. carnivore	lamankain
906. herbivore	halmankain
907. omnivore	tanankain
908. germination, ontogenesis	pamiminhay
909. growth	tubó, pagtubo
910. growth-ring, growth-layer	tandang-tubo
911. determine	takdaan
912. determinate	takdain
913. origin	kasimulan
914. biological origin	haynaying kasimulan
915. embryological origin	biligning kasimulan
916. great grandfather	nuno
917. grandfather	apo, lolo
918. ancestor	ninuno
919. ancestry	kanunuan
920. grandson	apó
921. descendants	inapó, inanák
922. progeny	kaapuhan
923. genealogy	palamulaan
924. genealogical chart	talamulaan
925. genetics	palamanahan
926. eugenics	butinsuplingan
927. heredity	kamanahan
928. hereditary	mánahin
929. genes	kamana
930. genetic activity	kamanahing kabilusan
931. acquired character	natamong sangkatangian
932. dominant character	nananaig na sangkatangian
933. recessive character	daiging sangkatangian
934. alleles	ibayo
935. allelomorph	kaibayong-anyo
936. resemble	makamukha, makawangis
937. structural resemblance	yariing pagkawangis
938. similarity	pagkakahawig
939. structural difference	yariing kaibhan
940. homolog (n.)	tulad
941. homologous	magkatulad, katulad
942. analog	kawangki
943. analogous organ	magkakawangking tatag
944. heterology	pagkakaiba

945. metabolism	kapbisa (sang**kap** + **bisa**)
946. nutritious, nutritive	mapaniya
947. digest (v.)	satunawin
948. absorption	pagsigom
949. assimilation	paghiangay
950. breathing	paghinga
951. excretion (system)	paluwasan
952. inspiration	suludhingahan
953. expiration	luwáshingahan
954. respiration	palahingahan
955. capillary attraction	higom-lamuymoy
956. capillary repulsion	sikway-lamuymoy
957. osmosis	pananagos
958. pathology	palásákitan (pag-aaral ng mga sakít)
959. pathologist	dalubsak*t
960. fossil	haytó (**buhay** na naging ba**to**)
961. cultural medium (socio.)	pangkalinangang talayta-yan
962. cultural medium (bio.)	linangang sangkap
963. conservation	satinggal
964. conservatism	panininggal
965. utilization	sagamit
966. preservation	saimbak
967. mass (bio.)	kimpal
968. biomass	haykimpal
969. biotic	hayanin
970. marsh	lati
971. pond	salog
972. creek	ilat
973. stream	sapa
974. spring	batis
975. brook	saimsím
976. brackish, briny (adj.)	matabsing
977. aquarium	isdaan
978. fishpond	paisdaan
979. fish culture	palaisdaan
980. swamp	pinák
981. moor	labón (Mat. Tag.)
982. fen	tunlak, tanlak, tarlak
983. mire, quagmire	timak,timakan
984. estuary (of a river)	wawá

985. rivulet . . . . . ilug-ilugan
986. lake lawá
987. sea dagat
988. ocean karagatan
989. biotic environment háyaning kaligiran
990. delta . . . . . delta
991. desert iláng
992. duct anuran
993. dorsal panlikod, likuran
994. ventral katiyanan
995. symmetry . . . . . parianyo **(paris + anyo)**
996. asymmetry diparianyo
997. reflex balikusa
998. mitosis hatimbutod
999. amitosis hatinsihay
1000. Geology Division . . . . . Sangay ng Dalubdutaan

MGA DAGLAT
(Abbreviations)

PILIPINO

Mat. Tag.	Matandang Tagalog
Bis.	Bisaya
Kpn.	Kapampangan
Hlg.	Hiligayon
Mar.	Maranaw

INGLES

n.	noun
v.	verb
adj.	adjective
Elec.	Electricity
Mech.	Mechanics
Bio.	Biology
Chem.	Chemistry
Socio.	Sociology
min.	mineral
gen.	general